



DEPARTMENT OF THE NAVY  
HEADQUARTERS UNITED STATES MARINE CORPS  
WASHINGTON, DC 20380-0001

MCO 8420.18  
CBGT  
1 Sep 93

MARINE CORPS ORDER 8420.18

From: Commandant of the Marine Corps  
To: Distribution List

Subj: MATERIEL FIELDING PLAN (MFP) FOR THE ARMORED VEHICLE  
MAINTENANCE SYSTEM (AVMS)

Ref: (a) MCO P4105.3

Encl: (1) Materiel Fielding Plan for the Armored Vehicle  
Maintenance System (AVMS)

1. Purpose. This MFP is published per the provisions of the reference. It is intended to serve as the single, stand-alone document which consolidates all actions, schedules, procedures, requirements, and information necessary to field, support, and maintain the AVMS.
2. Information. This MFP provides information in sufficient detail and accuracy to allow field commanders to place the AVMS in service upon receipt.
3. Action. Addressees shall comply with the requirements of the reference and the contents of the enclosure.
4. Reserve Applicability. This Order is applicable to the Marine Corps Reserve.

  
J. A. BRABHAM  
By direction

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MATERIEL FIELDING PLAN  
FOR THE  
ARMORED VEHICLE MAINTENANCE SYSTEM (AVMS)

1. Introduction

a. Source of the Requirement. The Marine Corps requirement for the AVMS was generated to fill an urgent need for Operations Desert Shield/Storm.

b. Points of Contact (POC). A listing-of-essential POC's is displayed below. Those listed will serve as the focal points for assistance and problem resolution.

| <u>Title</u>              | <u>Command/Code</u>               | <u>Phone (DSN)</u> |
|---------------------------|-----------------------------------|--------------------|
| PM, Ground Weapons        | MARCORSYSCOM<br>(CBG)             | 278-2136           |
| APM, Tank Systems         | MARCORSYSCOM<br>(CBGT)            | 278-2137           |
| AVMS Project Officer      | MARCORSYSCOM<br>(CBGT)            | 278-2137           |
| Liaison Officer           | US ARMY TACOM<br>(SFAE-ASM-MCLNO) | 786-6337           |
| WS/EM                     | COMMARCORLOGBASES<br>(CODE 833-3) | 567-6766/67        |
| Requirements and Programs | MCCDC (WF-11B)                    | 278-3142           |
| Training                  | MARCORSYSCOM<br>(PSL-MT)          | 278-3739           |

c. Fielding Methodology

(1) General Fielding Plan. The AVMS is being fielded vertically. Systems will be delivered per appendices A and B.

(2) Method of Fielding. All AVMS's will be shipped to Marine Corps Logistics Bases (MARCORLOGBASES) for distribution to the using units identified in appendix A. AVMS's destined for Maritime Pre positioning Ships (MPS) will be stored by MARCORLOGBASES, Albany, GA until rotation permits delivery.

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The AVMS will be force fed to using units, therefore, submission of requisitions is not required.

(3) Schedule. AVMS's have been delivered.

d. Replaced Weapons Systems. Not applicable.

2. System Description

a. Administrative Information

(1) Nomenclature: AVMS

(2) Table of Authorized Material Control Number (TAMCN):  
E0038IIBP

(3) Stores Account Code: 3

(4) National Stock Number (NSN): 4910-01-360-1584

(5) Model No.: 650RD

(6) Unit of Issue: Each

(7) Unit Cost: \$12,832

(8) Support Cost: \$1,753

(9) Petroleum, Oil, and Lubricants: 1.5 gal/hr DF2 or  
JP-8

(10) Equipment Density: Normal

(11) Readiness Reporting: Not applicable

|                  | <u>Operational<br/>Configuration</u> |       | <u>Storage/Shipping<br/>Configuration 1/</u> |             |
|------------------|--------------------------------------|-------|--|-------------|
|                  | <u>Compressors/<br/>Engine</u>       |       | <u>Tools</u>                                 | <u>Pump</u> |
| (a) Length (in): | 46                                   | 53    | 50   | 25.25       |
| (b) Width (in) : | 26                                   | 30    | 26   | 24          |
| (c) Height (in): | 24                                   | 30.25 | 25   | 18.75       |
| (d) Square (ft): | 8.3                                  | 11    | 9  | 4           |
| (e) Cube (ft):   | 16.6                                 | 27.8  | 19   | 6.6         |

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(f) Weight (lbs): 340 476 246 134

(g) Stowage (cuft): 52

(h) Power Requirements: 28 Volts, direct current;  
slave electric start.

1/ The AVMS and components are shipped from the contractor in  
three separate crates.

b. Operational Characteristics. The AVMS consists of an air  
compressor powered by an air-cooled diesel engine with vacuum and  
blower attachments, pneumatic power tools, and a fuel transfer  
pump. The AVMS permits crew/company maintenance/operator  
personnel to perform certain critical preventive and corrective  
maintenance functions in forward locations. Track/suspension  
maintenance, air induction system maintenance, and fuel transfer  
from tank to tank are the three primary uses of the AVMS.

(1) The AVMS has the following capabilities:

(a) Fifty cubic feet per minute of compressed air for  
M1A1 air filter (V-Packs) cleaning (blowing).

(b) Pneumatic powered tools with up to 1,500 foot  
pounds torque for track and suspension system maintenance.

(c) Vacuum cleaning.

(d) Fuel transfer pump at a rate of up to 35 gallons  
per minute.

c. Associated Systems/Equipment

| <u>NOMENCLATURE</u>                              | <u>ID NO</u> | <u>TAMCN</u> | <u>NSN</u>       |
|--|--------------|--------------|------------------|
| Tank, Combat, Full<br>Tracked, 120mm Gun<br>M1A1 | 08953A       | E1888VIIMP   | 2350-01-087-1095 |

3. Logistics Support

a. Maintenance Support

(1) General. The AVMS will be maintained per MCO 4856.1,  
Marine Corps Maintenance Policy, and MCO P4790.2, Marine Corps  
Integrated Maintenance Management System (MIMMS) Field Procedures  
Manual. Interim Contractor Support (ICS) for the AVMS will be  
provided for 24 months commencing on the date of delivery to  
using units. A form NAVMC 696D will be used to maintain a

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historical record of AVMS transfers, receipts, modifications, and assembly replacement. It will also serve as a file folder for the following annotated or completed forms:

- (a) Form NAVMC 10254-Equipment Repair Order.
- (b) Form NAVMC 10524-Consolidated Engineer Equipment Operational Log and Service Record.
- (c) Standard Form 368, Product Quality Deficiency Report (PQDR).
- (d) Other-forms, notes or essential information directly related to effective maintenance and contractor maintenance/warranty.
- (e) Forms and records will be maintained per TM 4700-1511.

(2) Categories/Echelons. Maintenance of the AVMS will be conducted per the maintenance levels contained in MCO P4790.1, MIMMS Introduction Manual. Maintenance will be performed only within the echelon(s) authorized to perform the functions. Preventive maintenance will be conducted primarily as a first echelon function, and corrective maintenance will be accomplished at the lowest appropriate echelon.

(3) Responsibilities. Tank company personnel are responsible for performing organizational (first and second echelon) maintenance. The tank battalion Headquarters and Service Company (H&S Co) is authorized to conduct organizational and intermediate maintenance (up to and including third echelon) on the AVMS. Force Service Support Groups (FSSG) will perform intermediate (third echelon) maintenance beyond the tank battalions' capabilities (overflow) as well as general support (fourth echelon) maintenance. Depot level (fifth echelon) maintenance will not be required. The provisions of the ICS will allow for rapid requisitioning and receipt of repair parts or major components, e.g., engine or compressor, as required. Procedures for the exercising ICS are detailed in paragraph 3b.

(4) Levels of Maintenance

(a) Organizational Level. Maintenance in this category consists of functions performed in the first and second echelons. Applicable functions and the performing agency at each echelon are:

1 First Echelon. Maintenance functions in this echelon are performed by a Combat Tank Crewman MOS 1812. Maintenance consists of Preventive Maintenance Checks and

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Services (daily, weekly, and monthly), lubrication, limited trouble shooting and repair, and monitoring/reporting system conditions. Authorized functions for this echelon are limited to inspection, lubrication, cleaning, preserving, tightening, and performing minor adjustments to mechanical, electrical, and pneumatic systems.

2 Second Echelon. A Combat Tank Repairer (MOS 2146) organic to the tank company will perform selected preventive and corrective maintenance functions within this maintenance echelon. Components which require repair beyond the capabilities of the tank company will be evacuated to battalion maintenance. Maintenance consists of diagnosis of malfunctions in components using tools authorized in the tank company Table of Equipment. Replacement of components is performed if such replacement can be accomplished with organic common tools.

(b) Intermediate Level. Maintenance in this category consists of functions performed in the third and fourth echelons. A Combat Tank Repairer will perform intermediate level maintenance. Applicable functions and the performing agencies are as follows:

1 Third Echelon. The tank battalion (H&S Co) will perform third-echelon maintenance using organic maintenance personnel, repair parts, and secondary repairables from the Supported Activity Supply System (SASSY) Management Unit. Maintenance consists of diagnosis/fault isolation and adjustment/alignment of components which can be accomplished with organic test equipment.

2 Fourth Echelon. Fourth-echelon maintenance will be performed by the supporting FSSG Engineer Equipment Repairer (MOS 1341) through equipment evacuation to the FSSG by the using unit or contact teams from the FSSG. The principal function of fourth echelon maintenance is to repair subassemblies and assemblies, for return to ready for issue status. When the nature of the defect and operational commitments require, Operational Readiness Float exchange will be used. Fourth echelon maintenance functions consist of:

a Diagnosis and fault isolation of malfunctions to the internal piece part level; adjustment, alignment, and repair, as necessary, for restoration to required tolerances or standards.

b Replacement of defective modular components which are beyond the authorized capability of lower echelons of maintenance.

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(c) Depot Level. The AVMS will not require depot level maintenance.

b. ICS. ICS has been negotiated to support the AVMS maintenance for a period of two years commencing on the date of delivery. Commander, Marine Corps Systems Command (COMMARCORSSYSCOM) is responsible for budgeting and paying for ICS. ICS for the AVMS will include support for all maintenance beyond second echelon; supply support; packaging, handling, storage, and transportation; diagnostic equipment; and training. The contractor will activate a repair and storage facility no later than 30 days prior to initial AVMS deliveries. Units are authorized direct liaison with the contractor for maintenance support during the contracted two year ICS period.

(1) Supply Support. The contractor will receive, inspect, store, control, and maintain supply support material including, but not limited to, AVMS spare parts at the ICS facility. The contractor will issue and ship spare and repair parts in response to field requisitions (DD Form 1348-1). A minimum Authorized Stock List (ASL)/Prescribed Load List (PLL) will be overpacked with equipment.

(2) Repair. The contractor will not provide on-site field service representatives. Upon identification of an AVMS failure beyond second echelon maintenance, using units will telephone the contractor (Ingersoll-Rand Company) at commercial telephone number (615) 672-0808 for disposition instructions. Equipment failures will be resolved by telephone call, contractor contact team, or by evacuating the equipment to the contractor's facility. Unserviceable AVMS's will be shipped to the contractor's facility or, based upon the contractor's disposition instructions, to an affiliated repair facility (see the commercial manual) freight paid by the contractor. A DD Form 1348-1 will be prepared for AVMS's returned for repair/replacement. An Equipment Repair Order Shopping/Transaction List (NAVMC 10456) will be prepared and closed by the using unit with an "SC" (scrounge) entry upon receipt of repaired/floated AVMS's. The turnaround time for repaired AVMS's will not exceed 30 days.

(3) All tools and diagnostic equipment required for intermediate AVMS maintenance and repair will be provided by the contractor. Tools and diagnostic equipment will become government property upon completion of ICS.

(4) Training. The contractor will provide crew/organizational level training in conjunction with the fielding of AVMS. Specific training information is provided in paragraph 3c below.

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c. Manpower, Personnel, and Training

(1) Personnel Requirements. No changes to the affected T/O (4234G and 4237G) will be required for this system. The AVMS will be operated/maintained by personnel assigned Combat Tank Crewman (MOS 1812) and Combat Tank Repairer (MOS 2146), who are currently assigned to the above T/O's. Fourth echelon repairs will be performed by existing Engineer Equipment Repairer (MOS 1341).

(2) Training Requirements

(a) General. Instructor and Key Personnel Training will not be conducted. Therefore, units are encouraged to provide the maximum available personnel to participate in on site contractor training during fielding. MARCORLOGBASES, Albany, GA will be responsible for coordinating the training of MPS maintenance personnel and reserve Inspector-Instructors. The contractor will provide crew/organizational level operator and maintenance training. The contractor will include the following subject areas in the training during fielding:

- 1 Crew level operator maintenance.
- 2 Crew level preventive maintenance.
- 3 Safety of use of equipment.
- 4 Maintenance concept.
- 5 Organizational level repair procedures.

(b) Schedule. The contractor spent one week with both the 1st and 2d Tank Battalions for training. The battalions were trained one company at a time. Each company received classroom training and hands-on training using the AVMS and associated equipment. The company undergoing training used eight of the AVMS's assigned to the battalion to support training.

(c) Follow-On Training. Follow-on training will be conducted at Ft Knox, KY through formal schools for MOS 2146 and MOS 1812.

(3) Training Support Items

(a) Audio-visual aids and training materials will be provided to units upon completion of training.

(b) The following equipment will be required to support training for each company:

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- 1 Classroom.
- 2 Overhead projector.
- 3 Desks.
- 4 Eight AVMS's.
- 5 Eight M1A1 Tanks.

(4) Training Material. Student guides in contractor format will be provided to each student attending scheduled courses.

d. Supply Support

(1) General. MARCORLOGBASES (Code 833-3), Albany is the Primary Inventory Control Activity for the AVMS.

(2) Supply Concept. During the ICS period, support covering all echelons will be located at the contractor's White House, TN facility. ICS will provide all spare/repair parts (class IX) and tools required for the support of the AVMS for a period of two years. MARCORLOGBASES (Code 833-3), Albany will provide follow-on support. The contractor has developed a recommended initial issue spare parts list. A minimum ASL/PLL will be overpacked with the AVMS.

(3) Requisitioning Procedures. During the ICS period spare/repair parts will be provided by the contractor as a free issue to the units. Requisitioning of parts will be an off-line process to the contractor. All requisitions will be submitted (data faxed) to the contractor's facility (fax number 615-672-0601) using DD form 1348-1. All requisitions will be addressed to the attention of Ms. Deanna Smith. All requisitions will contain the following information: part number, NSN, quantity, document number, and an in-the-clear unit address. There will be no requirement to collect usage data at the unit level during the ICS period.

(4) Follow-On Supply Support. The contractor will be responsible for usage data collection during the ICS period. The usage data collected by the contractor will be provided to MARCORLOGBASES (Code 833-3), Albany on a six-month intermittent basis to ensure that an adequate system stock procurement level can be established and procured prior to completion of the two-year ICS period. MARCORLOGBASES, Albany will forward the usage data collected to the SASSY Management Units for loading (establishment of Requisitioning Objectives) prior to the end of the ICS period. MARCORLOGBASES (Code 833-3), Albany will provide all follow-on supply support upon completion of the two year ICS

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period. For sustainment, standard requisitioning/supply procedures Military Standard Transaction and Issue Procedures SASSY will be utilized.

e. Support Equipment

(1) Special Tools. Metric allen wrenches and a metric socket wrench set are required for certain tasks.

(2) Common Tools. All tools required to maintain and repair the AVMS are included in Common Number 1 (TAMCN C9672) and Common Number 2 (TAMCN C9673) tool sets.

(3) Special Purpose Test Equipment. Not applicable.

(4) General Purpose Test Equipment. Not applicable.

(5) Test Program Sets. Not applicable.

(6) Other Support Equipment. Not applicable.

f. Technical Publications. A commercial TM which includes operation and general maintenance instructions for the AVMS compressor, engine, and tools has been developed by Ingersoll-Rand. A supplemental TM, TM 09728A-14&P, to include a repair parts and special tools list will be attached to the commercial manual. Both will be overpacked with the AVMS. An SL-3 will be published and distributed via normal distribution channels.

g. Commuter Resources Support. Not applicable.

h. Facilities

(1) Existing Facilities. Existing facilities to support the M1A1 Tank are adequate to support the AVMS.

(2) New Facilities. No new facilities are required for operation, maintenance, training, supply or storage of the AVMS.

(3) Interim Facilities. MARCORLOGBASES, Albany will provide interim storage space for all AVMS's.

i. Packaging, Handling, Storage, and Transportation

(1) Packaging. The AVMS and repair parts will be packaged for first destination shipment to MARCORLOGBASES, Albany according to best commercial standards. Prior to shipping to MPS, MARCORLOGBASES, Albany will be responsible for Level "A"

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packing of each AVMS unit per with Federal Standard 102A. The AVMS will not be Level "A" packed for shipment to other gaining commands.

(2) Preservation. There are no special preservation requirements after placement in service.

(3) Handling. There are no special handling procedures or equipment required for the AVMS.

(4) Storage. Assuming that normal anti-pilferage precautions are observed, no unique security requirements exist.

(5) Transportation. The AVMS will be delivered to the government via commercial transportation of the contractor's choice. AVMS's held by tank units, MARCORLOGBASES, Albany and FSSG's may be transported by ground vehicles, aircraft or ships subject to the carrier's requirements for shipping.

j. Warranties. Not applicable.

#### 4. Actions Required to Place Equipment in Service

##### a. Commanding Generals, 1st Marine Division, 2d Marine Division, and 4th Marine Division

(1) Appoint a single POC to coordinate the fielding of the AVMS. This Marine should coordinate all training per paragraph 3c(2) above.

(2) Provide administrative, logistics, and personnel support to the fielding team as required.

(3) Report receipt/acceptance of material, post documentation and establish equipment accountability.

(4) If necessary, submit Reports of Discrepancy (ROD) (SF 364) per MCO 4430.3J.

(5) If necessary, submit PQDR (SF368) per MCO 4855.10A.

(6) Provide the maximum number of personnel possible to undergo New Equipment Training (NET) when the AVMS is fielded.

##### b. COMMARCORLOGBASES, Albany, GA

(1) Appoint a single POC to coordinate the fielding of the AVMS. This person should coordinate all training per paragraph 3c(2) above.

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- (2) Provide administrative, logistics, and personnel support to the fielding team as required.
- (3) Report receipt/acceptance of material, post documentation, and establish equipment accountability.
- (4) If necessary, submit ROD (SF 364) per MCO 4430.3J.
- (5) If necessary, submit PQDR (SF 368) per MCO 4855.10A.
- (6) Provide the maximum number of personnel possible to undergo NET when the AVMS is fielded.
- (7) Coordinate the fielding of the AVMS to MPS.
- (8) Coordinate the training of MPS maintenance personnel.
- (9) Establish procedures to collect supply/maintenance usage data on the AVMS from the ICS contractor.
- (10) Provide temporary storage for all of the AVMS units until they are fielded to using units.
- (11) When directed by COMMARCORSYSCOM, ship the AVMS units to designated commands.

c. COMMARCORSYSCOM

- (1) Assume overall responsibility for fielding the AVMS.
- (2) Ensure that the ICS contractor is prepared to provide the contracted supply and maintenance support prior to fielding the AVMS.
- (3) Ensure that all technical documentation to support the AVMS is available at the time of fielding.
- (4) Direct the COMMARLOGBASES, Albany when to ship the AVMS units to designated commands.
- (5) Coordinate all activities related to fielding the AVMS.

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LIST OF ALLOWANCES AND DELIVERY SCHEDULES

| T/E NO | UNIT TITLE                      | UNIT<br>ALLOWANCE | ACTUAL<br>ALLOWANCE | PLANNED |     |   |   |
|--------|---------------------------------|-------------------|---------------------|---------|-----|---|---|
|        |                                 |                   |                     | FY93    | QTR | 1 | 2 |
| 7011   | MCLB, BARSTOW, CA (MF)          | 2                 | 2                   | 2       |     |   |   |
| 7014   | MARCORLOGBASES, ALBANY, GA (MF) | 2                 | 2                   | 2       |     |   |   |
| H1521  | H&S CO, TK BN/MPS I             | 2                 | 2                   | 2       |     |   |   |
| H1524  | TK-CO, TK BN/MPS I              | 2                 | 4                   | 4       |     |   |   |
| I1521  | H&S CO, TK BN/MPS II            | 2                 | 2                   | 2       |     |   |   |
| I1524  | TK CO, TK BN/MPS II             | 2                 | 4                   | 4       |     |   |   |
| J1521  | H&S CO, TK BN/MPS III           | 2                 | 2                   | 2       |     |   |   |
| J1524  | TK CO, TK BN/MPS III            | 2                 | 4                   | 4       |     |   |   |
| N1521  | H&S CO, 2d TK BN, 2d MARDIV     | 2                 | 2                   | 2       |     |   |   |
| N1522  | TK CO, 2d TK BN, 2d MARDIV      | 2                 | 8                   | 8       |     |   |   |
| N1511  | H&S CO, 1st TK BN, 1st MARDIV   | 2                 | 2                   | 2       |     |   |   |
| N1512  | TK CO, 1st TK BN, 1st MARDIV    | 2                 | 8                   | 8       |     |   |   |
| N1544  | RESERVE TK CO, 4th TK BN        | 2                 | 4                   | 4       |     |   |   |
| Total  |                                 |                   | 46                  | 46      |     |   |   |

Appendix A to  
ENCLOSURE (1)

SCHEDULE OF EVENTS

| <u>Event</u>     | <u>Dates</u>  |
|------------------|---|
| MPS III Fielding | July 1993<br>September 1993<br>December 1993<br>February 1994 |
| MPS Fielding     | April 1994  |

Appendix B to  
ENCLOSURE (1)